PHX300

2 x 150W PA HEAD WITH DSP EFFECTS

Item ref: 178.738UK

User Manual

⚠	Caution: Please read this manual carefully before operating Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing the QTX PHX300 PA Head as part of your sound reinforcement system. This mixer-amplifier is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual fully and follow the instructions to achieve the best results with your new purchase and to avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS

CAUTION **RISK OF ELECTRIC SHOCK** **DO NOT OPEN**	**AVIS** **RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR**

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.
Note: This unit must be earthed

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet
- Speaker leads should be of good quality and have cores which are capable of full power output
- Do not allow any foreign objects to enter the case or through the ventilation grilles

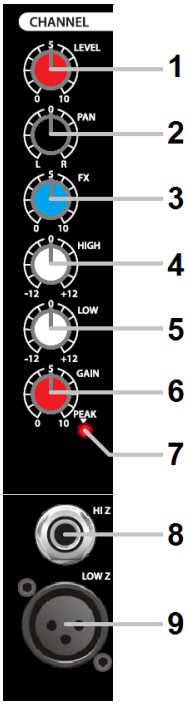
Placement

- Keep out of direct sunlight and away from heat sources
- Keep away from damp or dusty environments
- Ensure adequate air-flow and do not cover cooling vents at the front and rear of the amplifier
- Ensure adequate access to controls and connections

Cleaning

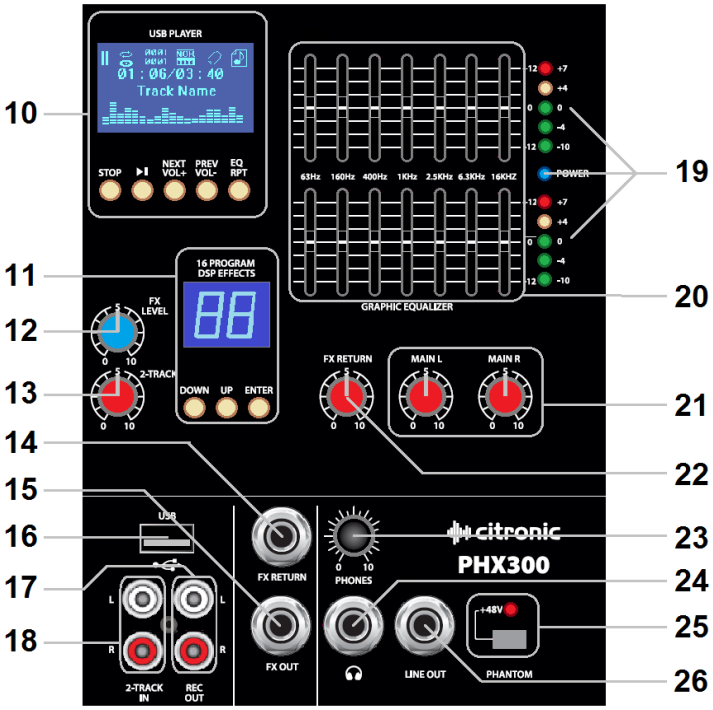
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Input Channel



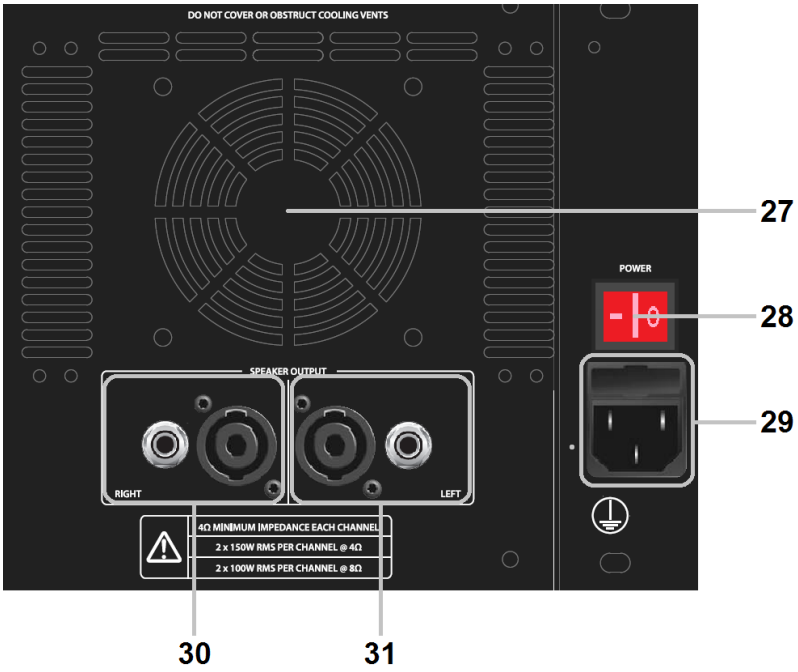
1. Channel output level (volume)
2. Pan control (left/right)
3. DSP Effects level
4. High frequency EQ control
5. Low frequency EQ control
6. Channel Gain level
7. Peak level LED indicator
8. High impedance input (e.g. Line / instrument) - unbalanced 6.3mm jack
9. Low impedance input (e.g. Microphone) - balanced XLRF

Master Section



10. USB player control & display
11. DSP effects (FX) section
12. FX send level
13. 2-track input level
14. FX return 6.3mm jack
15. FX out (send) 6.3mm jack
16. USB device input
17. REC output connectors (L+R RCA)
18. 2-track input connectors (L+R RCA)
19. Power and level meter LEDs
20. Graphic EQ frequency sliders
21. Main Left and Right output level
22. FX return level
23. Phones output level
24. Phones output - stereo 6.3mm jack
25. Phantom power switch (+48V)
26. Line out 6.3mm jack

Rear Panel



27. Cooling fan
28. Power on/off switch
29. IEC mains inlet and fuse holder
30. Right channel SPK + jack outputs
31. Left channel SPK + jack outputs

Setting Up

Connect speakers via the outputs on the rear panel (30, 31) using good quality speaker leads with 6.3mm jack or SPK connectors and twin core cable, recommended no smaller than 2 x 0.5mm² CSA.

When connecting speakers to the outputs, ensure that the combined load on either channel is no lower than 4 Ohms (4Ω). To make sure of this, check the manufacturer's information.

If connecting more than one speaker, observe the following calculation method.

$$\frac{1}{\text{Impedance of speaker 1}} + \frac{1}{\text{Impedance of speaker 2}} = \frac{1}{\text{Total Impedance}}$$

Most PA and sound reinforcement speakers are 8Ω, so we consider that **1/8** + **1/8** = **1/4**

Therefore, when connecting 2 x 8Ω speakers to a channel on the PHX series PA head, the resulting total load is **4Ω**.

When 2 speakers are connected to a single output, each speaker will receive half of the rated output of that channel.

With the power switch (28) in the Off position, connect the IEC inlet (29) to the mains using the power lead provided.

Connect a microphone via one of the balanced XLR inputs (9) or a line input to an unbalanced jack connector (8) for each channel to be used.

Wiring for balanced mic and unbalanced line inputs are shown below.

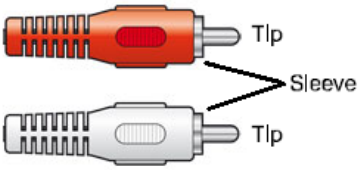
XLR plug

1 = GND
3 = –
2 = +

Jack plug

TIP = +
SLEEVE = GND

RCA plugs



Operation

To check an input, ensure that Pan and Low / High EQ controls (2, 4, 5) are set to the vertical (12 o'clock) position and the Level, FX and Gain controls (1, 3, 6) are turned fully down.
Turn the Master volume controls (21) down and set all Graphic EQ sliders (20) to halfway position.

Some microphones and DI boxes require phantom power to operate (check manufacturer's spec.)
A Phantom power switch (25) provides +48V to all XLR inputs with an indicator to show when active.

Switch the mains power on (28) and check the microphone or line level input whilst increasing the Gain control (6) until the red Peak LED (7) lights when the loudest sound is produced at the input. Back the Gain down control down until the Peak LED lights only momentarily on the loudest sounds. The channel gain is now set to match the input source.

Turn up the Master volume controls up part way and gradually increase the Channel output level (1) for the microphone or line input source whilst checking the output through the connected speakers.

Alternatively, a USB pen drive with compressed audio tracks stored can be connected to the USB Audio Player (10) for checking playback. More details are shown in the "USB player" section below.

Once the sound has been checked through the speakers, increase the Master volume to the required level, ensuring that the LED level meter (19) doesn't continually reach into the red (+7dB).

The red +7dB level meter LED should only ever light briefly on the loudest peaks of the sound (e.g. bass drum beat) and if it lights for anything longer than momentarily, the Channel or Master levels must be reduced until it stops lighting.

Adjust the channel output level controls (1) to balance the mix and if required, adjust the tone of any channel by boosting or cutting the Low and High controls (4, 5) – the vertical position is neutral.

Further tone adjustment for the overall mix is available via the master Graphic Equalizer (20).
This section is home to 2 sets of 7 sliders which range from 63Hz to 16kHz centre frequencies.
Halfway up the slider is neutral, top position is 12dB boost and bottom is 12dB cut of that frequency.

An auxiliary 2-track input is provided on L+R RCA connectors (18) for a line level playback source.
The level of 2-track to the outputs is controlled by the 2-track level rotary control (13)

For recording, there is a REC output on L+R RCA connectors (17) delivering line level stereo output.

A mono line output is also provided via a 6.3mm jack (26) for monitoring and further amplification.

For monitoring with headphones, there is a stereo 6.3mm Phones jack output (24)
The headphone output level is governed by the Phones level control (23)

DSP effects

The PHX300 has a 16 program DSP effects (FX) section for vocal or instrument digital effects (11).
Use the UP/DOWN keys to step through the 16 internal programs and ENTER to select.
The effects section is fed from each channel via its FX rotary control (3) and the combined input level is governed by the master FX level control (12) to avoid overdriving the DSP circuit.

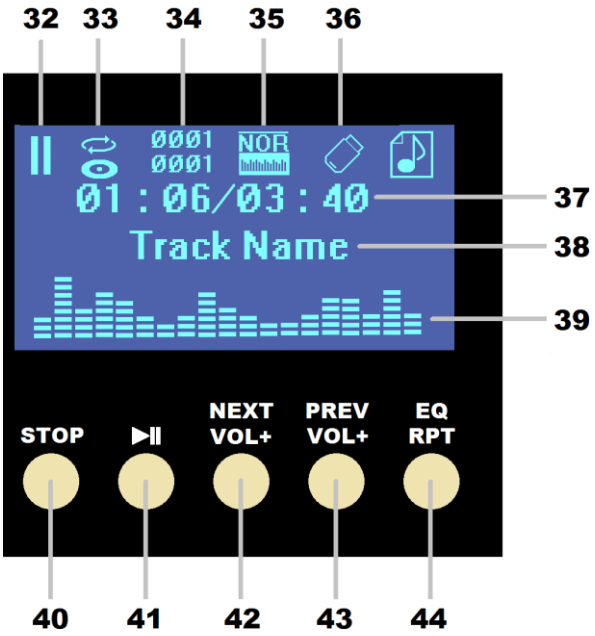
If the internal DSP is not required, this signal can be fed out of the PHX300 via the FX out jack (15)
This can be used as a separate auxiliary output, governed by the FX level control or as a separate mix and back into the PHX300 via the FX return jack (14) forming a send/return loop.

A list of the internal effect programs in the PHX300 is shown below.

Program	Effect
1	Room 1
2	Hall 1
3	Room 2
4	Hall 2
5	Hall 3
6	Plate 1
7	Modulated Reverb
8	Gated Reverb
9	Chorus 1
10	Chorus 2
11	Hall 4
12	Large Hall
13	Delay 1
14	Delay 2
15	Hall 5
16	Reverse Reverb

USB player

The PHX300 PA head has a built-in audio player which can playback compressed digital audio files stored on a USB memory device.



32. Play/pause status
33. Repeat status
34. Folder and track number
35. EQ mode
36. USB device status
37. Track time elapsed & remaining
38. Track name
39. Playback active display
40. Stop key
41. Play/pause key
42. Next/volume+ key
43. Previous/volume- key
44. EQ/repeat key

To begin using the USB/SD audio player, insert a USB pen drive with standard compressed audio files stored on it into the USB type A connector on the front panel (16). Maximum capacity 32GB

Press Play/Pause key (41) to alternately pause or play the current selected track.
Pressing the Stop (40) key will stop playback and return to the start of the track.

To navigate through tracks stored on the USB device, press the Next or Prev keys (42, 43).
Pressing and holding these buttons adjusts the output volume up or down.

The EQ/Rpt key (44) steps through preset EQ profiles for playback, indicated on the LCD display.
Holding this key down toggles the repeat play modes, also indicated on the LCD display.

Specifications

Power supply	230Vac, 50Hz (IEC)
Fuse	T5AL
Power rms @ 4 Ohms	2 x 150W
Power rms @ 8 Ohms	2 x 100W
Channel inputs	Balanced XLRF or unbalanced 6.3mm jack
Channel controls	Level, Pan, Aux, High, Low, Gain
Music source	Onboard USB audio player
Music control	Stop, Play/Pause, Previous, Next, Repeat
Effects	16 preset program DSP
Auxillary output	Effects send (6.3mm jack), REC out (RCA)
Auxiliary input	Effects return (6.3mm jack), 2TK in (RCA)
EQ master bands	63, 150, 400, 1k, 2.5k, 6.3k, 16kHz (stereo)
Master controls	Aux return, Main L, Main R
Phantom power	Globally switchable +48V (XLR inputs)
Phones output	Stereo 6.3mm jack (with level control)
Line output	Stereo 6.3mm jack
Speaker outputs	L+R SPK or 6.3mm jack
Dimensions	450 x 270 x 265mm
Weight	9.4kg

Troubleshooting

Power LED is not lit	Check power is switched on at the mains and at the rear panel
	Check IEC fuse – if blowing fuses, refer to qualified service personnel
Power LED is on but no other LEDs and no output	Check input signals and condition of connection leads
	Check channel gain and EQ controls are not turned fully down
	Check Master and channel level controls are not fully down
Power and level meter LEDs are lighting but no speaker output	Check output connections to speakers
	Check that speakers are in good working order
No playback from USB media	Check that files are standard compressed audio format
	Check the volume setting within the audio player
Output is very loud or distorted	Check level of input signal is not too high
	Reduce channel level and EQ settings
	Ensure Hi-Z line level input(s) not connected via XLR
	Check AUX level control and reduce if necessary
Output is working but at very low level	Check input audio source level is not too low
	Ensure low impedance line or mic signal is not connected via jack
	Increase channel level control and EQ settings if turned down
Feedback with microphones	Face microphone away from speakers and monitors
	Reduce channel level control and/or EQ level(s)

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Errors and omissions excepted.
Copyright © 2015. AVSL Group Ltd.